REMARKS

The Pending Claims

Claims 1, 2, 6-12, and 15-20 are currently pending. Claims 12 and 15-20 are directed to a substrate for an adhesive tape, while claims 1, 2, and 6-11 are directed to an adhesive tape comprising the substrate and an adhesive layer.

Summary of the Office Action

The Office has rejected claims 1, 2, 6-12, and 15-20 under 35 U.S.C. § 103(a) as allegedly obvious over Tucker et al. (U.S. Patent 5,498,476), individually or in combination with Richardson et al. (WO 97/05206). Reconsideration is hereby requested.

Examiner Interview

Applicants thank Examiner Chang for the courtesies extended to applicants' undersigned attorney during the telephonic interview of October 15, 2003. During the Examiner interview, Applicants, through the undersigned attorney, explored the Examiner's concerns underlying the obviousness rejection of the pending claims and discussed the two Rule 132 declarations already of record. Applicants pointed out that the first Rule 132 declaration (dated September 26, 2002) demonstrates that the disclosure of Tucker et al. does not anticipate or render obvious the present invention as defined by the pending claims and (b) the ethylene:propylene monomer ratio of CATALLOY KS-353P is not relevant to the demonstration that the disclosure of Tucker et al. does not anticipate or render obvious the present invention as defined by the pending claims. The Examiner responded that Applicants should put this argument in writing in response to the final Office Action and that he would reconsider the matter. The Examiner would not agree in advance that such an argument would be persuasive and result in an allowance. Applicants accordingly reiterate herein their argument that the evidence already of record demonstrates the patentability of the claimed subject matter in view of the cited references.

Discussion of the Rejection under Section 103(a)

The claimed invention is directed to a substrate for an adhesive tape, as well as the adhesive tape comprising the aforementioned substrate. The substrate comprises an olefin polymer and a flame retardant (but substantially no halogen atom), wherein the olefin polymer comprises Component A and Component B, in which Component B is a propylene/ethylene copolymer obtained by multi-step polymerization involving two or more steps and wherein Component B has a defined dynamic storage modulus. The adhesive tape

comprises the aforementioned substrate and an adhesive layer, wherein the adhesive tape has a thermal deformation at 100° C of not more than 65%.

Tucker et al. discloses an electrical tape comprising an adhesive and a halogen-free backing film comprising a resin containing an ethylene-propylene copolymer rubber (EP), ethylene-propylene-diene copolymer rubber (EPDM), ethylene vinyl acetate polymer, and ethylene diamine phosphate. However, Tucker et al. only describes solution or suspension polymerization as methods of preparing EP or EPDM rubber. Therefore, Tucker et al. does not disclose Component B of the substrate of the present invention, as recited in the pending claims. In particular, Tucker et al. does not disclose a propylene/ethylene copolymer obtained by multi-step polymerization involving two or more steps, let alone a propylene/ethylene copolymer that has a dynamic storage modulus as recited in the pending claims.

In the Examples, Tucker et al. discloses a resin component comprising ethylene-vinyl acetate (Elvax 470) (similar to Component A) and ethylene-propylene terpolymer (Epsyn 7506) (similar to Component B). As demonstrated in the Declaration under 37 C.F.R. § 1.132 of Yoshio Nakagawa dated September 26, 2002 (previously submitted), the dynamic storage modulus of the ethylene-propylene terpolymer (Epsyn 7506) does not satisfy the features recited in the pending claims for Component B. Moreover, when Epsyn 7506 is used in the manner similar to Component B of the present invention to form a substrate for an adhesive tape, the thermal deformation of the resulting adhesive tape at 100° C is 100%, which is too high compared to the value of 65% or below that is recited in the pending claims for the adhesive tape comprising the inventive substrate. Therefore, Tucker et al. does not disclose Component B as recited in the pending claims, and the evidence of record clearly demonstrates that the use of the most similar component actually disclosed in Tucker et al. (i.e., Epsyn 7506) does not result in either the substrate or the adhesive tape defined by the pending claims. Moreover, there is nothing in Tucker et al. that suggests the modifications necessary to arrive at the present invention. Under the circumstances, the disclosure of Tucker et al. cannot properly be considered to render obvious the substrate and adhesive tape of the pending claims.

Richardson et al. discloses a pressure sensitive adhesive comprising a tape substrate comprising (a) 40-85 wt.% olefin/vinyl or acrylic ester copolymer, (b) 0-20 wt.% low density polyethylene, (c) 20-55 wt.% inorganic filler and/or flame retardant, and (d) a silane coupling agent. Richardson et al. fails to disclose Component B (i.e., a propylene/ethylene copolymer) of the substrate of the present invention, as recited in the pending claims. Indeed, Richardson et al. does not disclose a propylene/ethylene copolymer of any type, let alone a propylene/ethylene copolymer obtained by multi-step polymerization involving two or more

steps in which the copolymer has a dynamic storage modulus as recited in the pending claims. Moreover, nothing in Richardson et al. suggests modifying the polymer materials disclosed therein, or even the polymer materials disclosed in Tucker et al., in order to obtain Component B, and then using it in combination with Component A, to form the substrate of the present invention.

In addition, none of the cited references recognizes that, by limiting the dynamic storage modulus of a propylene-ethylene copolymer obtained by multi-step polymerization, an adhesive tape or substrate therefor can be realized that does not generate dioxin or toxic gas upon incineration, has high levels of resistance to thermal deformation and flame resistance, and has a high level of stretchability, as can be observed with the present invention.

In view of the foregoing, the present invention, as defined by the pending claims, is not obvious from the disclosures of Tucker et al. or Richardson et al., whether considered individually or together. The evidence of record more than sufficiently demonstrates this fact, and nothing more should be needed in that regard. Applicants accordingly request that the obviousness rejection be withdrawn.

Conclusion

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

John Kilyk, Jr., Reg. No. 30,763
LEYDIG, VOIT & MAYER, LTD.
Two Prudential Plaza, Suite 4900
180 North Stetson Avenue
Chicago, Illinois 60601-6780
(312) 616-5600 (telephone)
(312) 616-5700 (facsimile)

Date: November 7, 2003